IN THE ABSTRACT:

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~~By using~~ Using an image signal acquired by picking up a sample to be inspected by a color video camera, penetrant inspection and magnetic-particle inspection, which are non-destructive inspections, are carried out so that deficiency candidates, including a pseudo deficiency, are automatically detected and ~~are~~ displayed on a screen. A real deficiency can be detected from the displayed deficiency candidates ~~displayed on the screen~~. As image data is stored in memory means, information of a deficiency can be repeatedly reproduced on the screen. In the penetrant inspection, the chromaticity at each position on an image is acquired, a deficiency candidate is extracted based on the chrominance, and the deficiency is distinguished from a pseudo deficiency based on the differential value of the chrominance. A polarization filter ~~is used to eliminate~~ eliminates regular reflection ~~originated~~ originating from illumination in the penetrant inspection, and an ultraviolet-rays cutting filter ~~is attached to the camera to prevent~~ prevents noise in the magnetic-particle inspection. ~~Equipped with both a white illuminating lamp and an ultraviolet illuminating lamp, both~~ Both inspections can be carried out with a single probe.